

REMARKS

Summary of the Office Action

In the Office Action, claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,409,455 to *Belden*.

Summary of the Response to the Office Action

Applicants amend claim 1 and add new claims 27-30. Accordingly, claims 1 and 27-30 are pending for further consideration.

Specification

The specification has been amended to correct minor informalities.

All Subject Matter Complies With 35 U.S.C. § 102(b)

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by *Belden*. This rejection is respectfully traversed in view of the above amendments to claim 1 and the following comments.

According to the present invention, the arrangement is such that the diagnostic-therapeutic catheter (B) accommodates the introducing catheter (A) to directly insert the diagnostic-therapeutic catheter (B) into the human organs without using a sheath. This enables an operator to insert as large as an 8-F size diagnostic-therapeutic catheter (2.67 millimeters in diameter) into a radial artery of almost every patient to fully treat them free from anxieties. This mitigates the pain that the patient usually suffers from, while at the same time, lessening the injury on the human organ tissues, as compared to the case in which the diagnostic-therapeutic catheter of the same size is used coupled with the sheath.

In the present invention, the outer surface of the introducing catheter (referred to as “inner tube” hereinafter) tightly engages with the inner surface of the diagnostic-therapeutic catheter (referred to as “outer tube” hereinafter), so as to establish surface-to-surface contact therebetween. This is reflected in the amended claim 1 in that the outer surface of the quasi-linear section tightly engages with the inner surface of the distal portion of the diagnostic-therapeutic catheter without a gap or clearance produced.

This surface-to-surface contact permits the introducing catheter to reciprocally move throughout the axial direction within the diagnostic-therapeutic catheter in combination with the push-and-pull operation that a manipulator conducts.

The surface-to-surface contact between the outer and inner tubes enables manufacturers to form the catheter assemble into a thinner configuration, thereby making it easier to directly insert the catheter assemble into the blood vessel with less intrusiveness felt by the patient to be treated. Support for the surface-to-surface contact is found in the specification as originally filed in, e.g., Figure 6, and is understood by the manner in which the introducing catheter moves.

When inserting the catheter assemble into the blood vessel, the blood tends to invade into the space between the inner and outer tube. The blood invasion into the space directly leads to a leakage outside the body. It is very important to prevent the blood from invading into the space between the inner and outer tube. However, it is impractical to provide a stanch valve on the handling portion in this type of catheter assemble. For this purpose, the surface-to-surface contact provides a complete stanch of the liquid flow, such as the blood invasion, with a relatively simple construction.

The surface-to-surface contact permits the introducing catheter to reciprocally move in the axial direction within the diagnostic-therapeutic catheter in combination with the push-and-pull operation that a manipulator conducts and is very convenient when conducting the following manipulation. That is, the reciprocal movement is very favorable and expedient when withdrawing the inner tube from the outer tube or re-inserting the inner tube into the outer tube after directly inserting the catheter assemble into the radial artery by a predetermined amount of length.

Although the outer surface of the inner tube tightly engages with the inner surface of the outer tube at its distal end so as to form the surface-to-surface contact, the distal end of the outer tube has a somewhat an elastic property so that the surface-to-surface contact structure permits the inner tube to reciprocally move within the outer tube throughout the axial direction in combination with the push-and-pull operation.

To the contrary, *Belden* forms the enlarged head 18 at the distal end of the inner tube 5 to act as a ledge located near the infusion lumen 14, as seen in Figures 3, 5 and 6. The enlarged head 18 closes the infusion lumen 14 and blocks the inner tube 5 from moving back into the outer tube when the inner tube 5 is pulled in the withdrawing direction. The enlarged head 18 prevents its outer surface from engaging with an inner surface of the outer tube 4, so as not to produce the surface-to-surface contact structure, which distinguishes the prior art reference from the present invention. *Belden* also shows the inner tube 5 diametrically smaller at the distal end than the distal portion 20 of the outer tube 4 as seen in Figures 1 and 2. This structure permits the infusion lumen 14 to always open at the distal portion 20, which distinguishes the prior art reference structurally from the present invention.

Thus, the Office Action has not established that the prior art anticipates the present invention for at least the reasons mentioned above, and that all of the rejections under 35 U.S.C. § 102(b) should be withdrawn.

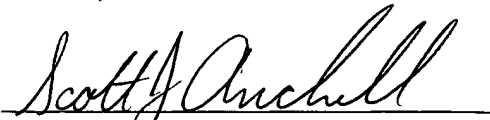
CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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